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ABSTRACT

This plan outlines the funding for activities of the Indiana Consortium for Computer and High Technology Education for the 1987-89 biennium. The consortium was created by the Indiana General Assembly in 1983 to promote effective use of technology in schools, evaluate educational computer use, provide training, and assist local schools in developing computer technology programs. The research and development activities of the consortium are described, as well as maintenance and support programs, including courseware and hardware training and support, instructional video programming, central service centers, specialized learning centers, preview centers, teacher fellowships, and conferences. Also described is a final consortium responsibility, the "Tomorrow's School" function, which is designed to provide a link between current and future educational technology activities. A chart of the Computer Learning and Training Appropriations for 1987-88, 1988-89, and the biennium totals is provided, together with a map showing the division of the state into northern, central, and southern regions for purposes of the consortium programs. (EW)

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**INDIANA CONSORTIUM FOR COMPUTER
AND
HIGH TECHNOLOGY EDUCATION
PLAN FOR
1987-1989 BIENNIAL**

**Final Approval
November 6, 1987**

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INTRODUCTION

The Indiana Consortium for Computer and High Technology Education was created by the Indiana General Assembly in 1983 with the passage of P.L. 216. The activities sponsored by the Consortium in its early years centered around the training of teachers and other school personnel in the field of computers and other technology. With computers becoming an ever more viable part of a child's daily educational experience, the Consortium recognized that unless teachers were familiar with the technology, its use would develop slowly or not at all in Indiana schools. During the first two (2) years (1983-1985), the Consortium provided training opportunities to 18,873 teachers, or 36% of the Indiana teacher population.

The second biennium of funding (1985-1987) saw the development of additional training programs. These second-round training exercises were presented in a variety of formats and tended to be more advanced than the training offered previously. In addition to training programs, the Consortium embarked on a program of demonstration efforts directed at implementing certain concepts in classroom technology usage. Foremost among these programs were self contained classroom programs and local initiative grant programs. The self contained classroom programs outfitted a total of nine classrooms with enough computers to provide a 2:1 student to computer ratio, while the local initiative grants provided up to \$60,000 to eight school corporations for innovative implementations of technology. The Consortium also established specific objectives for certain programs exemplifying technology or methods not covered under other demonstration projects. Among these special projects was a take home portable computer program for elementary students and the creation of a videodisc for secondary physics.

Programs conducted during the Consortium's second funding cycle, while maintaining a strong commitment to training for teachers and administrators, initiated a new emphasis on demonstration efforts, future technologies and the overall integration of technology into the classroom. This basic shift in the emphasis of the Consortium, i.e., institutionalizing basic training efforts and coordinating technology demonstration efforts through the Department of Education and the Consortium, provided a necessary preface to the activities contained in this plan.

This plan, which outlines activities of the Consortium for the 1987-1989 biennium, continues in the direction established previously. Although the plan exhibits a strong commitment of the Consortium to meeting the training and information needs of Indiana teachers mandated by the ever changing state of the art in technology, there is a growing commitment to demonstration efforts, long term evaluation of these efforts, and future technology planning. Without establishing best and worst case futures scenarios, Indiana educators will be forever playing a game of "catch up" in the effective use of high technology.

Establishing a viable plan which results in effective use of a wide range of technologies in education relies on a number of factors, not all of which are even identified, let alone clearly foreseeable. Building on a partnership with the Department of Education, local school corporations, business and industry and scores of dedicated, insightful individuals, this plan sets forth a foundation for maintenance and training, research and development, and exploration and study in the fields of educational technology designed to:

- Provide improved, broader and more comprehensive education at a lower cost;
- Provide more individually tailored instruction;
- Improve manpower efficiencies in the teaching process;
- Provide improved evaluation/pupil measurement methods;
- Provide improved information transfer to students; and
- Provide the best possible education to all Indiana students.

The purpose of the Consortium is to:

- Promote the effective use of technology in schools in ways which will result in positive educational growth for students;
- Evaluate the effectiveness of technology in education with respect to student achievement and overall student growth;
- Develop and implement training activities designed to take full advantage of the potential of current materials, hardware, courseware and supplies;
- Examine developing technology and plan efforts to demonstrate its use in today's and tomorrow's classrooms;
- Assist local schools in the development of planning and evaluation efforts to increase the effectiveness of technology in the curriculum;
- Seek out applications developed by other governmental, public, or private entities which have proven effective or show promise of improving education in Indiana; and
- Develop and coordinate private sector alliances which may result in courseware, innovative hardware or other technology-based educational tools to be used in Indiana schools.

RESEARCH AND DEVELOPMENT

Research and development functions of the Consortium will emphasize using and examining currently available technology and its application in educational settings. Coupled with extensive evaluation efforts, continued funding of selected demonstration efforts begun in the 1985-1987 biennium and the development of new sites will provide insight into effective teaching methods and strategies.

The Research and Development component will examine policy recommendations and general directions for consideration by the Consortium and the State Board of Education. In addition, evaluation procedures will be implemented which will form the basis for improvement in local school uses of computers.

The Consortium will continue certain activities and will concentrate on demonstration efforts which model the general use of available technology applied to the instructional setting. During the biennium, some efforts of the Research and Development function may come from recommendations made by the Tomorrow's Schools research function.

RESEARCH AND DEVELOPMENT OUTCOMES

OUTCOME: APPLICATION RESEARCH

- Work with future technology initiatives and current research on how to use technology to determine HOW and WHERE technology can be put to the best use. This includes:

- Developing a plan to promote the infusion of technology;
- Examining what changes in the teaching process will be needed to most effectively use the technology;
- Funding demonstration projects in local schools to explore various approaches to the use of technology in the classroom.

OUTCOME: POLICY RECOMMENDATIONS

- Examine areas of policy, legislation and other rules which may need to be modified to take full advantage of technology in the curriculum.

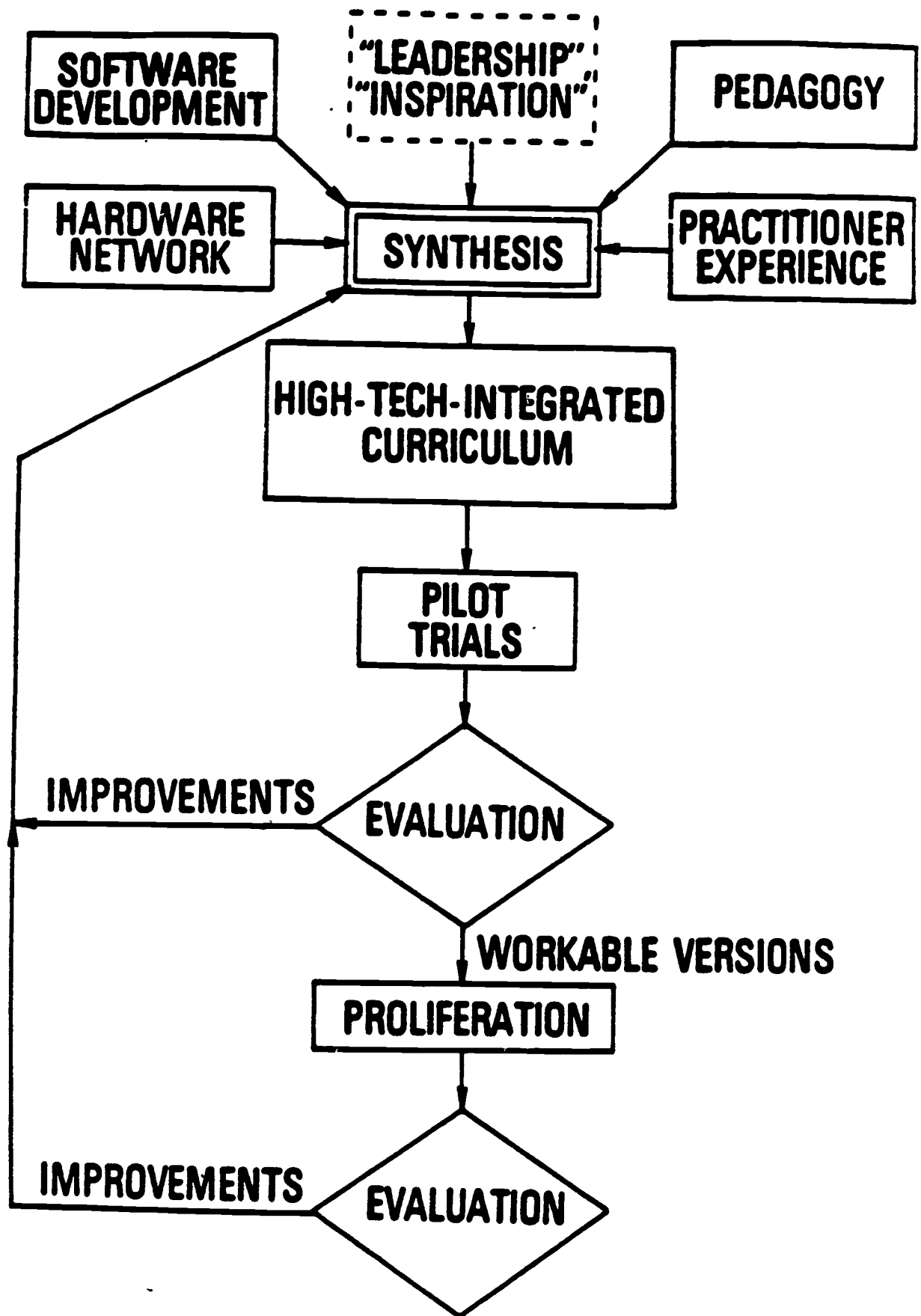
OUTCOME: EVALUATION PROCEDURES

- Develop formative evaluation procedures for use in local schools to improve ways in which technology is used;

- Develop procedures to measure the effectiveness of technology in curricular areas with respect to student achievement and performance.

OUTCOME: COOPERATIVE AGREEMENTS - MOBILIZATION OF RESOURCES

- Develop and sustain ties with private and public sector agents who can contribute to the development or procurement of high technology integrated curricula for school district use. (SEE CHART ON FOLLOWING PAGE)



RESEARCH AND DEVELOPMENT ACTIVITIES

FUNDING LEVEL: \$2,000,000

APPLICATION RESEARCH

In addition to continued funding for selected demonstration project efforts, the Consortium will initiate new demonstration efforts in selected areas. Besides testing the use of available new technologies in the classroom, the Consortium will examine how the teaching process must change in order to use technology most effectively.

POLICY RECOMMENDATIONS

Research and development functions will incorporate procedures to recommend policy to Department of Education and State Board of Education policy makers.

EVALUATION PROCEDURES

Both comprehensive and individual project evaluations will be conducted emphasizing the use and effectiveness of technology in instruction. Results of these evaluations will be used in designing new demonstration project efforts. Training efforts as well as demonstration projects will be evaluated.

MOBILIZATION OF RESOURCES

The Consortium will actively pursue opportunities which involve outside groups or agencies in efforts to learn as much as possible from projects related to educational technology. In addition to working cooperatively with existing and future efforts of these groups consistent with the goals of the Consortium, outside funding sources may be used, when appropriate, to advance the Consortium's purposes.

MAINTENANCE AND SUPPORT

Although new technologies are emerging at a rapid rate and quickly becoming affordable and thereby, viable educational tools, a large inventory of older, existing equipment will continue to be used. Although it would be ideal if schools across the state could purchase inventories of new technology as it becomes available, budgetary demands dictate otherwise. Therefore, while looking to the future, Consortium activities must be directed at making the best possible use of equipment that is available to schools. This is done through training, conferences and curriculum planning efforts. New technologies will be introduced to schools as particular needs are identified which cannot otherwise be met. Demonstration projects will provide models of effective uses of new technology.

In recent years video cassette recorders or VCRs have become one of the most tangible forms of technology in our society. In an effort to take full advantage of this technology in the schools the maintenance and support function will license, duplicate and distribute high quality, low cost video programming to schools. The maintenance and support function will provide vital support to Indiana schools through training in the use of technology, software and video preview services, as well as conferencing and other support functions.

The objectives of Maintenance and Support are as follows:

MAINTENANCE AND SUPPORT OUTCOMES

OUTCOME: TRAINING - A MECHANISM FOR TRAINING AND SUPPORT IN COURSEWARE AND HARDWARE

- Develop initiatives which promote effective utilization of existing equipment, courseware and other technology;
- Provide state level personnel to serve as consultant/trainers for school districts throughout Indiana. Training efforts will be coordinated through a Department of Education staff member;
- Provide highly specialized institutes and intensive training opportunities at institutions of higher education;
- Provide resources for school districts where individual training needs can be better met through locally initiated training;
- Provide opportunities for teachers to participate in fellowship programs;
- Provide specific training to enhance the overall effect of all Research and Development activities.

OUTCOME: HIGH QUALITY, LOW COST INSTRUCTIONAL VIDEO PROGRAMMING FOR SCHOOLS

- Identify programs that represent high quality video programming that can be used in schools to promote educational growth, license those programs and distribute them upon request to Indiana schools.

OUTCOME: CONFERENCES

- Provide topical conferences based on needs identified, in part, by state level trainers;
- Provide conference/forum opportunities for Indiana educators which show promise of improving the overall delivery of services or which promote positive adaptation of courseware/hardware for Indiana students;
- Provide conferences/forums to advise Indiana educators of possible shifts in policy or general direction of the Consortium with respect to the use of technology in schools;

- Provide conferences/forums to disseminate information obtained through the Research and Development and Tomorrow's Schools activities of the Consortium.

OUTCOME: RECOMMENDED PURCHASE PROCEDURES

- Examine current buying cooperatives between states, local schools, etc. to determine their effectiveness and cost savings potential;
- Explore statewide purchasing cooperatives and other ways to increase the hardware/software purchasing power of Indiana schools.

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MAINTENANCE AND SUPPORT ACTIVITIES

FUNDING LEVEL: \$2,344,583

TRAINING AND CONSULTATION - \$580,000

Training and consultation activities will involve the services of four (4) full time personnel employed through the Department of Education. Attachment A outlines the regions which three (3) full time trainers will serve. A fourth individual will coordinate training activities throughout the state, providing assistance to the regional trainers when needed. Training will be done largely at local school district sites.

Trainers will work with local school corporation personnel in developing training plans, exploring the best manner in which to integrate computers and other technology into the curriculum, and will demonstrate software packages which show promise of benefitting the local school.

Organizationally, training will be offered in a modified central/regional format. Using this structure, schools will have a "regional connection" as well as direct contact with the Department of Education. This approach does not abandon the regional concept that has been established over the past few years but instead builds on a platform that has contributed much to Indiana's teachers' understanding of technology.

Part-time consultants may be used to allow greater flexibility and service possibilities for schools in the same region requesting services on the same date or for special topics that the regional consultant does not feel comfortable presenting.

Using the Department of Education as the organizational hub of the training effort will provide centralization of materials purchasing and duplication services and will save dollars in materials costs and the amount of time

needed by each trainer for preparation. As a result, the consultants will spend a larger percentage of their time in professional activities and on-site computer consulting, with a benefit of more participant contacts for the training/consultation program.

The central program coordinator will monitor and perform follow-up on training and technical assistance and evaluate information that is collected from region to region. This centralized approach will provide a more accurate picture of services performed and will allow trainer/consultants to more accurately assess the needs of the state's schools.

The Central Service Center will:

- Maintain a "master calendar" of on-site services scheduled and provided by all consultants;
- Provide telephone assistance for all Indiana schools and a message center for all consultants;
- Recruit and schedule part-time consultants for technical assistance or Training Days;
- Provide follow-up activities for further assistance and evaluative information for assessment of the quality and value of the services provided;
- Provide and maintain records and reports of training and services for all activities for the Consortium and the Department of Education;
- Provide bookkeeping and management of budgeted funds for the various activities and expenses.

SPECIALIZED LEARNING INSTITUTES - \$200,000

The Consortium will conduct highly specialized training institutes through institutions of higher education. General subject areas may be recommended by the Consortium for the purpose of soliciting proposals. The Consortium may also entertain unsolicited proposals which meet certain identified needs for specialized training.

DISSEMINATION/EVALUATION - \$100,000

The Consortium will contract with an appropriate provider for an on-going evaluation of demonstration projects, training, and other major initiatives of the Consortium. The evaluations will be conducted annually and results will be disseminated to all Indiana school corporations.

Projects showing a high degree of success will be documented in a way so that other schools may replicate them if they choose. Development and dissemination of these replication models will be accomplished according to guidelines developed by the Consortium.

CONFERENCES - \$100,000

Conferences will be held in various regions of the state to promote sharing among participants, to meet identified specialized needs, and to promote and disseminate procedures, policies and general directions of the Consortium.

It is expected that ten (10) or more individual conferences will be conducted during the 1987-1989 biennium.

PREVIEW CENTER - \$200,000

Software companies and other suppliers lacked procedures for review of software products in local school districts when the Consortium first opened the Clearinghouse/Preview Center. Although the review of software at local districts is now more common, there still exists a need for a central preview location where schools can view large collections of software. The preview center will perform this function. In addition, the preview center will provide a video preview function to allow schools to evaluate video programming which is available to them.

Preview Center personnel will also cooperate with other agencies in preparing listings of available software.

SPECIALIZED LOCAL TRAINING AND TEACHER FELLOWSHIPS - \$500,000

In some cases, mass training efforts fail to reach a specific target because of specialized software used in a local district or because of specialized equipment, procedures or other needs. As a result, the Consortium proposes to make available funding to meet the individual training needs of local districts. Funding in this area will be made available in two categories: 1) Teacher Fellowship Grants and 2) Formula grant distributions.

A minimum of \$100,000 will be made available to promote teacher growth and to provide incentives to effectively use technology in the classroom. All Indiana teachers, guidance counselors and other instructional staff are eligible to apply for fellowships. Each fellowship applicant will be eligible to receive a maximum award of \$2,000 with the actual award determined by adherence to criteria established by the Consortium. Awards under this section will be made no later than May 1, 1988.

The formula grant distributions will be determined using a base amount of \$500 for each applicant school corporation. Above that amount, each corporation will be eligible to apply for a total amount not to exceed the \$500 base amount plus a derived amount for each enrolled pupil, (\$500 + Corp. ADA X derived amount).

The Consortium will be responsible for determining the allowable expenditure categories and will develop procedures for processing applications.

ADMINISTRATION - \$200,000

This category of funding will be used for state administration expenditures including salaries, travel, support of the Consortium and other related expenses.

TOMORROW'S SCHOOLS

FUNDING LEVEL: \$1,000,000

The Tomorrow's Schools function will provide a vital link between the activities of today and the schools of tomorrow. Coordinating with other efforts in the Department of Education, the Consortium will provide the ligature between efforts such as the development of proficiencies and projections of what technology and schooling may look like in five, ten or fifteen years.

While the present Consortium structure has been successful in spotting trends and finding new technology which is available to schools, there has been no active research in this direction. The Consortium will seek out the new horizons in technology as well as assist in the planning and use of these technologies. While INTELENET is probably six years away from implementation in the schools, it is not too early to start planning for its use. The Tomorrow's Schools function will make this a priority in addition to examining even newer technologies. As a planning entity, the Consortium will attempt to forecast when schools may be ready for the new technology.

TOMORROW'S SCHOOLS OUTCOMES

OUTCOME: An outline of future technological DIRECTIONS for schools

- To examine trends in technology and trends in education;
- To examine the implications of where the marriage of education and technology will lead.

OUTCOME: Planning strategies for use by local schools

- Develop a comprehensive long range planning guide for local schools to incorporate technology.

OUTCOME: New approaches and new technologies

- Survey other states, businesses, and other sources for emerging technologies that could be used in education;
- Assist in the assessment of these technologies and their potential use in local school curricula.

TOMORROW'S SCHOOLS ACTIVITIES

FUTURE TECHNOLOGIES IN EDUCATION

The Consortium will use a variety of methods to examine future directions in educational technology. Experts will be consulted through solicited papers, reports, conferences and symposia. Monitoring developments within Indiana, such as INTELENET, the Science in Education Committee of the Corporation for Science and Technology and the Center for Excellence in Education, the Consortium will also review trends in other states.

Mobilizing resources from within the state as well as those from outside will produce a rich environment conducive to research about tomorrow's schooling. Results of the research, papers and conferences will be made available to Indiana educational planners and curriculum specialists.

STRATEGIES FOR USE IN LOCAL SCHOOLS

In addition to providing information to local school planners in the use of educational technology, the Tomorrow's Schools function will help to assess the range of changes indicated for tomorrow's schools. Schools' personnel planning new facilities, for example, may wish to incorporate new designs for computer labs, advanced communications capabilities or other features that will allow for making better use of buildings in future years. Curriculum planners may wish to incorporate call-in computer banks for students who need remedial assistance or more challenging activities.

One activity in this overall effort will be the creation of a resource data base, listing available outside resources currently available for planners. This data base will be made available to Indiana educators through the Department of Education.

While the exact outcomes are unclear, it is apparent that technology will allow, facilitate, or perhaps force major changes in the schools of tomorrow. This Consortium effort is the first step down a long road to finding better ways of using technology for the maximum educational benefit.

NEW APPROACHES AND NEW TECHNOLOGIES

The Consortium recognizes its role of providing leadership that meets the needs of today and that plans for the needs of tomorrow. Using functional groups within the Department of Education as well as those alliances which spring from outside sources, the Consortium will establish a presence and posture for state involvement and direction that will be felt long into the future.

Computer Learning and Training Appropriation
(APPROVED JUNE 19, 1987)

	<u>1987-88</u>	<u>1988-89</u>	<u>1987-1989</u>
Tomorrow's Schools	500,000	500,000	1,000,000
Research and Development	1,050,000	950,000	2,000,000
Maintenance/Support			
Training and Consultation	280,000	300,000	580,000
Specialized Learning Institutes	100,000	100,000	200,000
Dissemination/Evaluation	50,000	50,000	100,000
Conferences	50,000	50,000	100,000
Preview Center(s)	100,000	100,000	200,000
Specialized Local Training	300,000	200,000	500,000
Administration	100,000	100,000	200,000
Instructional Video Services	<u>247,528</u>	<u>217,055</u>	<u>464,583</u>
	2,777,528	2,567,055	5,344,583

